

# VCE Psychology

## Written examination – June

### Examination specifications

#### Overall conditions

The mid-year examination will be sat at a time and date to be set annually by the Victorian Curriculum and Assessment Authority.

There will be 15 minutes reading time and 1 hour 30 minutes writing time. VCAA examination rules will apply. Details of these rules are published annually in the *VCE and VCAL Administrative Handbook*.

The examination will be marked by a panel appointed by the VCAA.

The examination will contribute 33 per cent to the Study Score.

#### Content

All outcomes of Unit 3 will be assessed in the examination. All key knowledge, including research methodologies and ethical principles, and key skills are examinable.

The assessment of the key skills which underpin all units of the *VCE Psychology Study Design 2011–2014* will be integrated within questions assessing the key knowledge. The examination will assess a representative sample of the key knowledge which underpins the outcomes of each unit. The assessment of the key skills which underpin the four units of the VCE Psychology Study Design will be integrated within questions assessing the key knowledge.

The weightings of questions in the examination will reflect the weightings in the outcomes in the study design.

**Area of Study 1 – Mind, Brain and Body** will be worth approximately 50% of the available marks.

**Area of Study 2 – Memory** will also be worth approximately 50% of the available marks.

#### Format

Each examination will be presented in a question and answer book and will consist of three sections: Section A, Section B and Section C.

**Section A** will consist of 45 multiple-choice questions worth 1 mark each.

**Section B** will consist of short answer questions. Students will be required to provide answers to Section B within the spaces allocated in the examination paper. The number of lines provided after each question, together with the number of marks allocated, will indicate the appropriate length of the response. However, if students require more space they may continue their answers in the space provided at the end of the book. Section B will be worth 30–35 marks.

**Section C** will consist of one extended answer question. This question may require students to comment on experimental design or write up the results of a case study/experiment or to write an extended response in response to a question or case study or experiment. This question will be worth 10–15 marks.

Questions in the examination will not be organised according to areas of study.

In all of Sections A, B and C, questions may be asked which cover individual areas of study and/or which cover more than one area of study as well as research methodologies and ethical principles.

#### Approved materials and equipment

Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, rulers.

Students are NOT permitted to bring into the examination room: blank sheets of paper and/or whiteout liquid/tape.

## Criteria

The extended answer question in Section C will be marked according to the following criteria.

In response to the specific question requirements, students will demonstrate an ability to

1. identify and describe the key terms/theories/issues
2. explain the relevant terms/theories/issues and make connections between psychological concepts/theories and data and research
3. use appropriate examples/evidence/data to support the response
4. interpret and analyse the issues/data/information
5. evaluate issues/data/information and draw appropriate conclusions.

## Advice

In the *VCE Psychology Study Design 2011–2014*, research methodologies and ethical principles are integrated throughout all Areas of Study in Unit 3. Consequently, questions which cover research methodologies and ethical principles will be asked as part of questions covering one or both Areas of Study, and will be integrated throughout the examination paper for Unit 3. These questions may be based around one or more case studies and/or research scenarios. Multiple-choice, short answer questions and the extended answer question may be asked in relation to research methodologies and ethical principles. Students will be required to use the knowledge and skills gained throughout Unit 3 in answering questions about psychological investigations and associated research methodologies and ethical principles.

The extended answer question may require students to:

- comment on experimental design or to write up the results of a case study/experiment or to write an extended response in response to a question/case study/experiment.
- respond to a question about content from either or both of the Areas of Study for the unit being examined.
- draw on students' knowledge of research and research skills.
- draw on examples from their study of Psychology and from experiments and case studies they have studied.
- relate their responses to case studies and/or research and/or experiments as well as the content of one or both the Areas of Study for that particular unit.

When case studies/research experiments are used, they may be either familiar or unfamiliar to the student. Where unfamiliar material is used, students will be expected to apply key knowledge and skills, and research methodologies and ethical principles to answer the question. This question may relate to either or both of the Areas of Study.

In the examination, students will be expected to have an understanding of tests of statistical significance as stipulated in the Study Design, and to draw conclusions and make generalised findings when these statistics are given. Students will not be expected to calculate any statistics in the examinations.

The following sample examination questions provide an indication of the types of questions which teachers and students can expect on the VCE Psychology examination. They do not constitute a full examination paper. There is an emphasis on new content in the sample questions.

For Section C in the sample questions, there are two possible extended answer questions – one a research question, and one a question requiring an extended answer. In the examination, there will only be one question. This question may be either a research question or an extended answer question. The research question in Section C uses the same scenario as the one used in Section A. This has been developed as a guide only to the way in which research scenarios may be used. Student responses to Section C may include any one, or a combination of: diagrams, charts, tables, bullet points, paragraphs or other appropriate communication formats. Although acceptable, a formal essay is not expected.

Answers to multiple-choice questions are provided on page 25.

Answers to other questions are not provided.

## Sample questions

### SECTION A – Multiple-choice questions

#### Question 1

According to the theory of dualism

- A. the forebrain is divided into two hemispheres.
- B. non-human animals have no souls, therefore they cannot think.
- C. each human being consists of two distinct entities – the mind and body.
- D. each human being consists of two distinct entities – the mind and soul.

#### Question 2

Pedro is meditating. He reports that his pain threshold is significantly lower compared with his pain threshold during his normal waking state.

This difference is best explained by

- A. divided attention.
- B. changes in self-control.
- C. changes in emotional feelings.
- D. a change in perceptual awareness.

*Questions 3 and 4 refer to the following scenario.*

Rajit had been working on a project in New York; he had only been able to sleep for three hours over two days before he went to catch his plane home to Melbourne. Due to heavy snow his flight was delayed for thirteen hours. Despite being extremely tired, he was unable to sleep at the airport because he was afraid he would miss the call to board his plane. While he was waiting he drifted into short periods of drowsiness or sleep, though he was not aware that he had been asleep at all.

#### Question 3

Rajit was likely to be experiencing

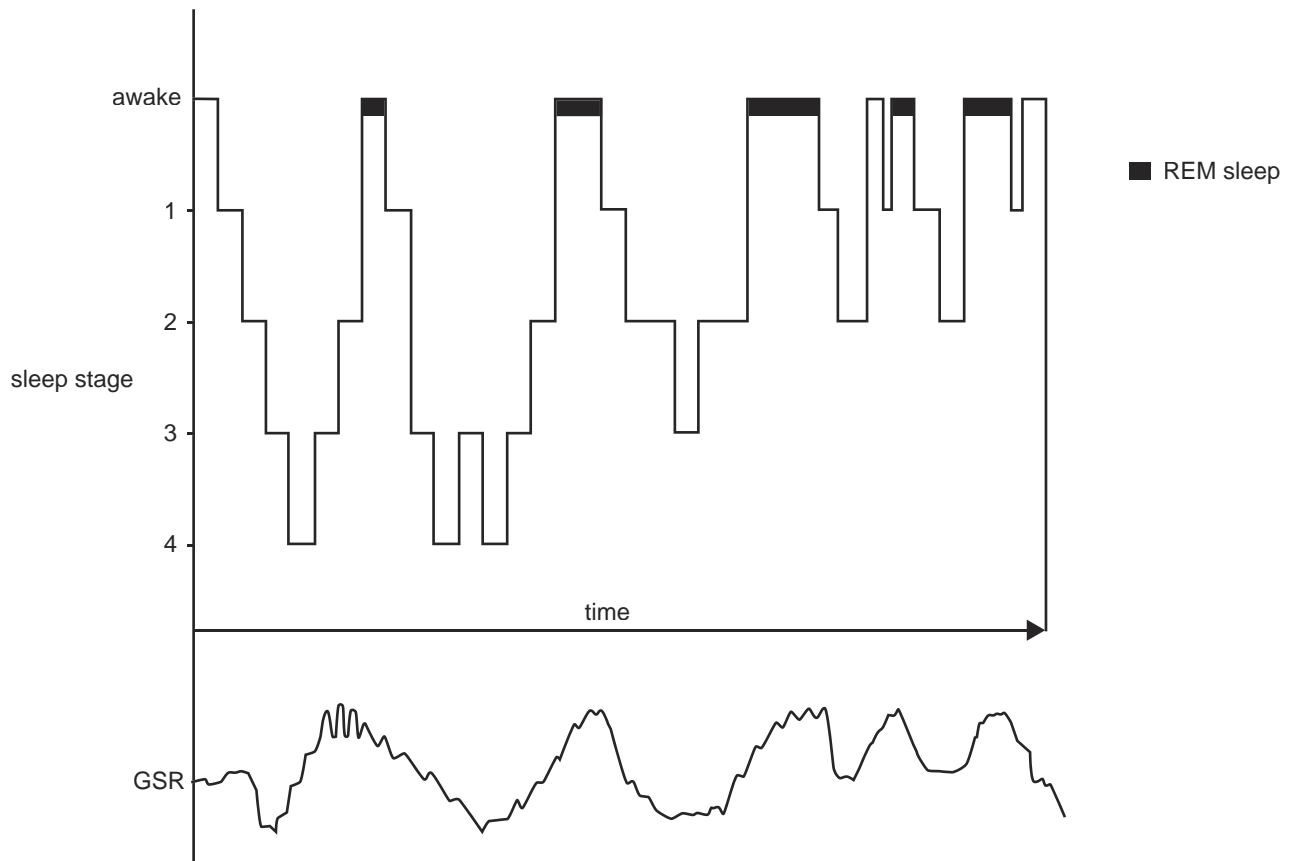
- A. REM sleep.
- B. stage 2 sleep.
- C. daydreaming, where his EEG pattern would have resembled the early stages of NREM sleep.
- D. a microsleep, where his EEG pattern would have resembled the early stages of NREM sleep.

#### Question 4

Eventually, when Rajit boarded his plane, he fell asleep very quickly and he remained asleep for eighteen hours. This was because Rajit was experiencing

- A. narcolepsy.
- B. REM rebound.
- C. total sleep deprivation.
- D. the sleep-wake cycle recovery.

### Question 5



The graph above shows that arousal

- A. increases during REM sleep.
- B. decreases during REM sleep.
- C. increases during NREM sleep.
- D. remains stable during REM and NREM sleep.

*Questions 6–8 refer to the following information.*

Dr Daydream believes that adolescents are more likely to have dreams about success on the sporting field at weekends, rather than on other nights. He tells his participants to keep a 'dream diary' for one month, recording all dreams, their duration and their content. After this time, he collects the diaries and asks two assistants to 'score' each night's dreams for percentage of sports' success content.

### Question 6

The dream diary is an example of

- A. a self-report.
- B. a Likert scale.
- C. an objective report.
- D. an operationalised variable.

**Question 7**

Dr Daydream asked two different assistants to 'score' the diaries to control for

- A. experimenter effects.
- B. participant effects.
- C. placebo effects.
- D. sampling bias.

**Question 8**

Dr Daydream has asked participants to video-tape themselves while they are asleep so that he can compare their amount of body movement with dream records.

On the videos he is likely to see that, when compared to people who report short periods of dreaming, those people who report longer periods of dreaming will show

- A. more total body movement.
- B. less total body movement.
- C. equal body movement.
- D. no body movement.

*Questions 9 and 10 refer to the following information.*

In one case study an fMRI showed that when a series of numbers were read aloud, the part of the brain responsible for identifying colour was activated.

**Question 9**

This case study is an example of

- A. synaesthesia.
- B. spatial neglect.
- C. change blindness.
- D. motion after-effect.

**Question 10**

A possible conclusion that could be drawn from this case study is that

- A. visual information is processed in the brain before auditory information in this person.
- B. auditory information is processed in the brain before visual information in most people.
- C. the cognitive processes involved in identifying sound and vision are the same in all people.
- D. the neurological processes involved in processing sound and vision are interlinked in this person.

*Questions 11–13 refer to the following information.*

Peter was riding his scooter but not concentrating on the path in front of him. He bumped into an overhanging tree branch and fell to the ground, hitting his head on the footpath. He was knocked unconscious for a few minutes.

**Question 11**

Since the accident, Peter eats only the food on the right-hand side of a plate in front of him.

The part of Peter's brain that is most likely to have been damaged is

- A. the occipital lobe of his right hemisphere.
- B. the temporal lobe of his left hemisphere.
- C. the parietal lobe of his right hemisphere.
- D. the frontal lobe of his left hemisphere.

**Question 12**

After his accident, Peter was unable to recall the particular events of his accident.

This is most likely to be explained by

- A. anterograde amnesia.
- B. retroactive interference.
- C. damage to Peter's occipital lobe.
- D. consolidation failure.

**Question 13**

The part of Peter's brain which is responsible for initial processing and encoding memory for information about the events of his accident is the

- A. thalamus.
- B. frontal lobe.
- C. hippocampus.
- D. reticular activating system.

**Question 14**

Amnesia patients with damage to their hippocampus typically experience

- A. retroactive amnesia.
- B. anterograde amnesia.
- C. amnesia for iconic memories.
- D. amnesia for echoic memories.

**Question 15**

Jules suffered damage to his hippocampus in a skateboard accident.

He is likely to

- A. lose the ability to store new facts.
- B. be incapable of any future learning.
- C. lose memory for skills such as bicycle riding.
- D. lose memory for taste (memory for the ability to describe taste).

**Question 16**

Which area of the brain is most important in the processing of implicit memories?

- A. thalamus
- B. amygdala
- C. hippocampus
- D. motor cortex

**Question 17**

Which one of the following is **not** an expected effect of ageing on memory in a healthy adult?

- A. decline in episodic memory
- B. decline in procedural memory
- C. taking longer to develop new skills
- D. slowed rate of retrieval of semantic information from memory

*Questions 18–20 relate to the following information.*

Mrs Cunningham is 80 years old and has recently been diagnosed with Alzheimer's disease.

**Question 18**

On which memory task is Mrs Cunningham's performance most likely to show a decline in the first phase of this disease?

- A. procedural memories
- B. formation of new memories
- C. recall of episodic memories
- D. recall of semantic memories

**Question 19**

Mrs Cunningham's memory decline due to the disease is likely to be caused by

- A. changes in hormone production.
- B. changes in neurotransmitter production.
- C. motivation to forget unpleasant life events.
- D. lack of confidence in her memory abilities.

**Question 20**

The last type of Mrs Cunningham's memory to be affected is likely to be her

- A. iconic memory.
- B. sensory memory.
- C. procedural memory.
- D. declarative memory.

*Questions 21–23 refer to the following information.*

Craik and Lockhart (1972) proposed that different levels of encoding determine both how long material is retained in memory (durability) and the ease of retrieval of this material from memory.

In one experiment they took three different groups of participants and asked them to process 60 random words using a particular learning technique.

Each group was asked to answer questions about each word as follows.

Group A – ‘Does the word rhyme with “cat”?’

‘Find another word that rhymes with it.’

Group B – ‘Does the word fit in the sentence “He found a \_\_\_\_\_ in the street”?’

‘Make up a sentence with this word in it.’

Group C – ‘Is the word in upper-case or lower-case letters?’

‘Does the word start with a consonant or vowel?’

### **Question 21**

Craik and Lockhart’s levels of processing theory proposes that the length of time for which the words are likely to be retained in memory is

- A. longest – Group A, shortest – Group B.
- B. longest – Group A, shortest – Group C.
- C. longest – Group B, shortest – Group A.
- D. longest – Group B, shortest – Group C.

### **Question 22**

The processing level of Group A is referred to as

- A. semantic encoding.
- B. phonemic encoding.
- C. structural encoding.
- D. elaborative encoding.

### **Question 23**

After they had completed the exercise, the participants were then given a surprise test for their memory of the 60 words which they had learnt.

The results of these tests would most likely show that the number of words recalled in order from greatest to least would be

- A. Group A, Group B, Group C.
- B. Group B, Group A, Group C.
- C. Group C, Group B, Group A.
- D. Group A, Group C, Group B.



*The following research scenario should be used to answer Questions 24–39.*

Dr Traumer, investigating the effect of sleep deprivation on memory, asked all the third-year Psychology students (100 males and 100 females) from Koala University to participate in a study. Students were offered extra marks in their Psychology final score if they agreed to participate in the study.

Of the 200 third-year students, 90 volunteered for the study (45 males and 45 females). Dr Traumer wanted to investigate whether the memories of third-year Psychology students at Koala University were impaired when they had suffered some sleep deprivation.

Prior to the study, informed consent was given.

### **Procedure**

All participants were asked to memorise a list of 40 psychological terms and their meanings. They were then tested on their recall of the terms.

A research assistant then randomly allocated the students into three groups.

**Group A** – normal sleep group – had a normal eight hours sleep

**Group B** – minimal sleep group – had four hours sleep

**Group C** – no sleep group – were awake all night

Twenty-four hours later, all participants returned.

All participants were tested by a research assistant on their recall of psychological terms and their meanings. Dr Traumer was not aware which participants were in each group.

Participants were debriefed after the study.

The mean difference in the recall of words across the two lists was calculated. The results are presented in the table below.

N = 90	Mean number of terms recalled on the first occasion (Trial 1)	Mean number of terms recalled 24 hours later (Trial 2)	p-value for mean difference (Trials 1 and 2)
Group A – normal sleep	33.3	33.2	p = 0.94
Group B – minimal sleep	34.6	28.8	p = 0.05
Group C – no sleep	33.8	21.3	p = 0.001

The researcher set a level of significance at 0.05.

p-values were calculated for the difference between the mean scores on Trial 2 for the groups as follows.

**Difference Group A and Group B:** p = 0.06

**Difference Group A and Group C:** p = 0.001

**Difference Group B and Group C:** p = 0.01

### **Question 24**

The research aim for this study is

- A. that sleep deprivation impairs recall.
- B. that sleep deprivation leads to impaired recall.
- C. to investigate the effects of sleep deprivation on recall.
- D. to investigate the effect of diminished recall on sleep deprivation.

**Question 25**

An appropriate research hypothesis for this study would be

- A. that longer periods of sleep deprivation lead to greater decline in recall ability for third-year Psychology students at Koala University.
- B. that for third-year Psychology students at Koala University, the greater the sleep deprivation experienced, the greater will be the decline in recall ability.
- C. that for third-year Psychology students at Koala University, a period of sleep deprivation will lead to decreased recall ability.
- D. that a period of sleep deprivation will cause decreased recall ability for university students from Koala University.

**Question 26**

The independent variable in this study is

- A. memory for words.
- B. amount of sleep deprivation.
- C. number of words correctly recalled.
- D. sleep deprivation or no sleep deprivation.

**Question 27**

The population in this study is

- A. all people.
- B. all adults.
- C. all third-year university students at Koala University.
- D. all third-year university students studying Psychology at Koala University.

**Question 28**

What form of sampling was used in this study?

- A. random sampling
- B. stratified sampling
- C. convenience sampling
- D. random-stratified sampling

**Question 29**

The experimental research design that was used in this study is referred to as

- A. repeated-measures design.
- B. independent-groups design.
- C. matched-participants design.
- D. independent-pairs design.

**Question 30**

The dependent variable in this study is

- A. memory for words.
- B. amount of sleep deprivation.
- C. number of words correctly recalled.
- D. sleep deprivation or no sleep deprivation.

### Question 31

The researcher, Dr Traumer, used a single-blind procedure in this research.

For this study this means that

- A. the participants were not informed about the purpose of the study.
- B. the participants did not know whether they were in the experimental or control group.
- C. the participants and researcher did not know which participants were in the experimental group and which were in the control group.
- D. the researcher did not know which participants were in the experimental group and which were in the control group.

### Question 32

The participants were debriefed.

Which of the following would **not** have been included in the debriefing?

- A. Participants may be informed of which experimental group they were in.
- B. Participants are informed of how to obtain counselling if they feel that they need it.
- C. Participants are informed of the procedures that will be required of them during the research.
- D. Participants are informed of the findings of the study if they have asked to be so informed.

### Question 33

From the p-values calculated, which of the following statistical conclusions **is incorrect**?

- A. Memory for Group B was significantly more affected than Group A.
- B. Memory for Group C was significantly more affected than Group B.
- C. Memory for Group C was significantly more affected than Group A.
- D. There was no significant difference between the levels of effect on Groups B and C.

### Question 34

Can the results of this study be generalised to the population and why?

- A. Yes, because they reached statistical significance.
- B. No, because some p-values were greater than 0.05.
- C. No, because the participants were a convenience sample.
- D. Yes, because the sample was representative and random allocation was performed.

### Question 35

What ethical standard or consideration was breached by the researcher?

- A. confidentiality
- B. informed consent
- C. no-harm principle
- D. voluntary participation

### Question 36

Which of these statements is best supported by the p-values calculated?

- A. Group A showed greatest impairment of memory function.
- B. Group B showed greatest impairment of memory function.
- C. Group C showed greatest impairment of memory function.
- D. All groups showed significant impairment of memory function.

**Question 37**

Which of these statements is not supported by the p-values calculated?

- A. The change in mean scores for Group C was significantly greater than the change for Group B.
- B. The change in mean scores for Group C was significantly greater than the change for Group A.
- C. The change in mean scores for Group B was significantly greater than the change for Group A.
- D. The change in mean scores for Group A was significantly greater than the change for Group C.

**Question 38**

These results suggest that

- A. sleep assists with muscular regeneration.
- B. sleep is necessary for memory formation.
- C. sleep deprivation for one night caused retrograde amnesia.
- D. sleep deprivation for one night caused proactive interference.

**Question 39**

fMRI scans were taken while the participants were first learning the words.

Which of the following was most likely to be shown by the scans?

- A. Group A showed more activity in the hippocampus than Group B.
- B. Group B showed more activity in the hippocampus than Group A.
- C. Both Groups A and B showed high levels of activity in the hippocampus.
- D. Both Groups A and B showed low levels of activity in the hippocampus.

## SECTION B – Short answer questions

### Question 1

Explain what is meant by the term ‘consciousness’ as used by each of Descartes and James.

Descartes \_\_\_\_\_

\_\_\_\_\_

James \_\_\_\_\_

\_\_\_\_\_

2 marks

### Question 2

Identify two psychological characteristics that could distinguish daydreaming from normal waking consciousness.

1. \_\_\_\_\_

2. \_\_\_\_\_

2 marks

### Question 3

During sleep, body temperature may vary. Describe the typical changes in body temperature as a person moves through the NREM stages and into REM sleep.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2 marks

### Question 4

Describe two disadvantages of a self-report to gather data on sleep patterns.

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

2 marks

### Question 5

Complete the following table with reference to sleep patterns.

	Sleep required per night (hours)	% time in REM sleep
adult aged 35		
adolescent aged 16		
child aged 1		

3 marks

### Question 6

Isabelle is an athlete who runs marathons. After completing her most recent marathon, Isabelle was extremely tired. However, she fell into a contented sleep. Using the restorative theory of sleep, describe Isabelle's likely sleep patterns over the next 10 hours.

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2 marks

### Question 7

After a stroke that damaged the right parietal lobe of her brain, a 77 year old, ET, was diagnosed with spatial neglect. In order to understand more about the role of the brain in cognitive processes, ET was asked to participate in research which involved the researchers giving her a series of tasks. The findings of the research using ET were presented at a conference on the effects of brain damage.

a. What is spatial neglect?

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2 marks

b. Describe one task involving cognitive processes that ET is unlikely to be able to do.

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2 marks

- c. Identify the limitations of attempting to generalise any conclusions from this research.

1 mark

- d. Name and describe one ethical principle relevant to this research study.

2 marks

### Question 8

Studies of brain-damaged patients diagnosed with Wernicke's aphasia have provided neuroscientists with information about the role of Wernicke's area of the brain in cognitive processes.

Describe one way cognitive processes in patients with Wernicke's aphasia are impaired.

2 marks

### Question 9

Bonnie is driving her car when she sees a red light flashing, and hears the sound of a siren. She realises that it is an ambulance.

In the above scenario, explain the role of Bonnie's thalamus in

- i. seeing the red light of the ambulance

- ii. hearing the sound of the siren of the ambulance.

1 + 1 = 2 marks

### Question 10

- a. Where is the amygdala located?

1 mark

- b. Describe one primary function of the amygdala.

2 marks

### Question 11

Sperry and Gazzaniga pioneered 'split-brain' research which allowed scientists to understand more about consciousness through studying hemispheric specialisation.

In one of their experiments, a split-brain patient was seated looking at the centre of a screen when the word 'PENCIL' was flashed to the extreme left of the screen.

Describe what would happen and explain why this would occur in the following situations.

- i. When the patient was asked to state what was written on the screen

- ii. When the patient was asked to identify a pencil from among 10 items on the table, while blindfolded, using only his left hand to feel the objects.

2 + 2 = 4 marks

### Question 12

Identify two advantages of a SPECT scan compared to a CT scan.

Advantage 1 \_\_\_\_\_

Advantage 2 \_\_\_\_\_

2 marks



**Question 13**

The Transport Accident Commission (TAC) billboard reads ‘Microsleeps Can Kill’.

**a.** What is a microsleep?

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1 mark

**b.** When are microsleeps most likely to occur?

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1 mark

**c.** What can be done to avoid a microsleep?

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1 mark

### Question 14

A person who is meditating and a person who has consumed a large quantity of alcohol will both be in an altered state of consciousness (ASC). However, the physiological and psychological characteristics for each person will be different.

- a. Complete the following table to show these differences.

	Physiological characteristic	Psychological characteristic
Person meditating		
Person who has consumed alcohol		

4 marks

- b. Explain why there is a difference between the psychological characteristics of the person meditating and the person who has consumed alcohol.

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2 marks

### Question 15

In terms of 'levels of processing theory', how may Ebbinghaus' results have been different if he had learned words, rather than nonsense syllables? Explain your answer.

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2 marks

**Question 16**

According to Baddeley and Hitch's theory there are four components of working memory.

- a. Name the two storage components of working memory.

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2 marks

- b. What are the names and roles of the other two components of working memory?

name 1 \_\_\_\_\_

role \_\_\_\_\_

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name 2 \_\_\_\_\_

role \_\_\_\_\_

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2 marks

**Question 17**

- a. Describe the 'tip-of-the-tongue' phenomenon.

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1 mark

- b. Give one possible explanation why the 'tip-of-the-tongue' phenomenon occurs.

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1 mark

**Question 18**

Karlee's friend tells her the name and address of a great new music store. Karlee does not have a pen or paper to write down the information, so she repeats it over and over to herself.

Give an example of a narrative chaining that Karlee could use to increase her chances of being able to remember the name and address of the music store in a week's time.

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2 marks

**Question 19**

Use an example to show the difference between the mnemonic devices of acrostics and acronyms to assist memory.

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2 marks

**Question 20**

Sam was going shopping and had to buy some eggs, coffee, ham, apples and sugar. Provide an example to show how Sam could use the peg-word mnemonic device to assist his recall of shopping items in this sequence.

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1 mark

## SECTION C – Extended response questions

### Question 1

‘The temporal lobe has a considerable influence on our daily lives.’

Discuss the above statement.

Your answer should include at least one example from daily life and include reference to the primary and association cortex and structures in the medial temporal lobes.

[illegible]

10 marks

## Question 2

Write a report for the following study.

Your report should include

- a research hypothesis for the study
- identification of the operational Independent Variables (IV) and Dependent Variables (DV)
- a summary of the significance or otherwise of the findings
- a discussion of any ethical issues that may have been raised
- some brief conclusions about the study.

### Study

Dr Rogers, investigating the effect of sleep deprivation on memory, asked all the third-year Psychology students (200 males and 200 females) from Sunshine University to participate in a study. Students were offered extra marks in their Psychology final score if they agreed to participate in the study.

Of the 400 third-year students, 180 volunteered for the study (90 males and 90 females). The researcher wanted to investigate whether the memories of third-year Psychology students at Sunshine University were impaired when they had suffered some sleep deprivation.

Prior to the study, informed consent was given.

### Procedure

All participants were asked to memorise a list of 40 psychological terms and their meanings. They were then tested on their recall of the terms.

The researcher then randomly allocated the students into three groups.

**Group 1** – normal sleep group – had a normal eight hours sleep

**Group 2** – minimal sleep group – had four hours sleep

**Group 3** – no sleep group – were awake all night

Twenty-four hours later, all participants returned.

All participants were tested by a research assistant on their recall of psychological terms and their meanings. Dr Rogers was not aware which participants were in each group.

Participants were debriefed after the study.

### Results

The mean difference in the recall of words across the two lists was calculated. The results are presented in the table below.

N = 90	Mean number of terms recalled on the first occasion (Trial 1)	Mean number of terms recalled 24 hours later (Trial 2)	p-value for mean difference (Trials 1 and 2)
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The researcher set a level of significance at 0.05.

p-values were calculated for the difference between the mean scores on Trial 2 for the groups as follows.

**Difference Group A and Group B:** p = 0.06

**Difference Group A and Group C:** p = 0.001

**Difference Group B and Group C:** p = 0.01

[illegible]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

15 marks



## Answers to multiple-choice questions

Question	Answer
1	C
2	D
3	D
4	B
5	A
6	A
7	A
8	B
9	A
10	D
11	C
12	D
13	C
14	B
15	A
16	B
17	B
18	B
19	B
20	C
21	D
22	B
23	B
24	C
25	B
26	B
27	D
28	C
29	B
30	C
31	D
32	C
33	A
34	C
35	D
36	C
37	D
38	B
39	C